

1 I claim:

2       1. A leak-testing device for leak-testing a pipeline system, the pipeline system  
3 including a standpipe, the standpipe including a tee fitting, the tee fitting having a tubular  
4 section extending between first and second opposing openings axially aligned with each other,  
5 the tee fitting including a third opening communicating with the tubular section of the tee fitting  
6 and having internal threads, said leak-testing device comprising in combination:

7           a) a generally circular base plate, said circular base plate having a threaded outer  
8 periphery for threadedly engaging the internal threads of the third opening of the tee  
9 fitting, said generally circular base plate having a fluid passage extending centrally  
10 therethrough;

11          b) a wrench collar attached to said generally circular base plate and adapted to be  
12 engaged by a wrench for tightening said generally circular base plate within the third  
13 opening of the tee fitting;

14          c) a threaded bushing having a fluid passage extending centrally therethrough, the  
15 fluid passage of said threaded bushing being axially aligned with, and in fluid  
16 communication with, the fluid passage of said generally circular base plate, the fluid  
17 passage of said threaded bushing and the fluid passage of said generally circular base  
18 plate collectively forming a fluid channel, said threaded bushing being adapted to  
19 engage an end of a water supply hose to fill the standpipe with water through said fluid  
20 channel;

21          d) a one-way valve disposed within said fluid channel for admitting water through  
22 the fluid channel into the standpipe, while preventing water from escaping through the  
23 fluid channel out of the standpipe; and

24          e) said leak-testing device being attachable to the third opening of the tee fitting  
25 of the standpipe without extending into, and without obstructing fluid flow within, the  
26 tubular section of the tee fitting.

27       2. The leak-testing device according to claim 1 further comprising a cap to cover and  
28 seal said threaded bushing after leak-testing is complete.

29       3. The leak-testing device according to claim 2 wherein said cap is threaded to  
30 threadedly engage the threaded bushing.

31       4. The leak-testing device according to claim 1 wherein said one-way valve includes a  
32 valve seat having at least one aperture therein, and a deformable valve disposed proximate the  
33 valve seat.

1       5. The leak-testing device according to claim 4 wherein said valve seat is located  
2 within one of the group of elements consisting of said generally circular base plate, said wrench  
3 collar, and said threaded bushing.

4       6. The leak-testing device according to claim 4 wherein said one-way valve is an  
5 umbrella valve that allows fluid to flow in only one direction through the valve seat.

6       7. The leak testing device according to claim 1 wherein said threaded bushing is  
7 externally-threaded to engage a female end of a water supply hose.

8       8. The leak testing device according claim 1 wherein said threaded bushing is  
9 internally-threaded to engage a male end of a water supply hose.

10      9. A leak-testing device for leak-testing a pipeline system, the pipeline system  
11 including a standpipe, the standpipe including a tee fitting, the tee fitting having a tubular  
12 section extending between first and second opposing openings axially aligned with each other,  
13 the tee fitting including a third opening communicating with the tubular section of the tee fitting  
14 and having internal threads, said leak-testing device comprising in combination:

15       a) a generally circular base plate, said circular base plate having a threaded outer  
16 periphery for threadedly engaging the internal threads of the third opening of the tee  
17 fitting, said generally circular base plate having a first channel extending centrally  
therethrough;

18       b) a wrench collar attached to said generally circular base plate and adapted to be  
19 engaged by a wrench for tightening said generally circular base plate within the third  
20 opening of the tee fitting, said wrench collar having a second channel extending centrally  
therethrough;

21       c) a threaded bushing having a third channel extending centrally therethrough;  
22 said threaded bushing being adapted to engage an end of a water supply hose to fill the  
23 standpipe with water;

24       d) said generally circular base plate, said wrench collar, and said threaded bushing  
25 being integral with each other, and the first, second, and third channels being aligned  
26 about a central axis to collectively form a continuous fluid channel;

27       e) a one-way valve disposed within said fluid channel for admitting water through  
28 the fluid channel into the standpipe, while preventing water from escaping through the  
fluid channel out of the standpipe; and

1                 f) said leak-testing device being attachable to the third opening of the tee fitting  
2                 of the standpipe without extending into, and without obstructing fluid flow within, the  
3                 tubular section of the tee fitting.

4                 10. The leak-testing device according to claim 9 further including a threaded cap to  
5                 threadedly engage the threaded bushing, and to cover and seal said threaded bushing after leak-  
6                 testing is complete.

7                 11. The leak-testing device according to claim 9 wherein said one-way valve includes a  
8                 valve seat having at least one aperture therein, and a deformable valve disposed proximate the  
9                 valve seat, and wherein the valve seat is disposed between said threaded bushing and said  
wrench collar.

10                 12. The leak-testing device according to claim 9 wherein said one-way valve includes a  
11                 valve seat having at least one aperture therein, and a deformable valve disposed proximate the  
12                 valve seat, and wherein the valve seat is disposed between said wrench collar and said generally  
13                 circular base plate.

14                 13. The leak-testing device according to claim 9 wherein the one-way valve is an  
15                 umbrella valve.

16                 14. A method for leak-testing a pipeline system, the pipeline system including a  
17                 standpipe, the standpipe including a tee fitting, the tee fitting having a tubular section extending  
18                 between first and second opposing openings axially aligned with each other, the tee fitting  
19                 including a third opening communicating with the tubular section of the tee fitting and having  
internal threads, said method comprising the steps of:

- 20                 a) providing a generally circular base plate having a threaded outer periphery for  
21                 mating with the internal threads of the third opening of the tee fitting, the generally  
22                 circular base plate having a fluid passage extending centrally therethrough;
- 23                 b) providing a wrench collar on the generally circular base plate;
- 24                 c) disposing the generally circular base plate within the third opening of the tee  
fitting;
- 25                 d) engaging a wrench with the wrench collar for tightening the generally circular  
base plate within the third opening of the tee fitting;
- 26                 e) providing a threaded bushing having a fluid passage extending centrally  
therethrough, the fluid passage of said threaded bushing being axially aligned with, and  
in fluid communication with, the fluid passage of the generally circular base plate, the

1 fluid passage of said threaded bushing and the fluid passage of said generally circular  
2 base plate collectively forming a fluid channel;

3 f) forming a one-way valve within the fluid channel for admitting water through  
4 the fluid channel into the standpipe, while preventing water from escaping through the  
fluid channel out of the standpipe;

5 g) attaching the end of a water hose to the threaded bushing and substantially  
filling the pipeline system with water;

6 h) checking the pipeline system for leaks; and

7 i) permanently leaving the generally circular base plate, wrench collar, threaded  
8 bushing and one-way valve in place within the third opening of the tee fitting after leak  
testing is completed.

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10 15. The method according to claim 14 including the further step of engaging a sealing  
cap over the threaded bushing after leak testing is completed.  
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12 16. The method according to claim 15 wherein the threaded bushing and sealing cap are  
13 made of plastic, and including the further step of applying plastic cement to at least one of the  
14 threaded bushing and sealing cap before engaging the sealing cap over the threaded bushing.

15 17. A method for leak-testing a pipeline system, the pipeline system including a  
16 standpipe, the standpipe including a tee fitting, the tee fitting having a tubular section extending  
17 between first and second opposing openings axially aligned with each other, the tee fitting  
18 including a third opening communicating with the tubular section of the tee fitting and having  
internal threads, said method comprising the steps of:

19 a) attaching a leak testing device to the third opening of the tee fitting, the leak  
20 testing device including a threaded bushing for receiving the end of a water supply hose,  
21 and including a one-way valve for admitting water through the threaded bushing into the  
standpipe, while preventing water from escaping through the threaded bushing out of the  
22 standpipe;

23 b) attaching an end of a water supply hose to the threaded bushing of the leak  
testing device;

24 c) supplying water to the threaded bushing and into the standpipe through the  
leak testing device to substantially fill the standpipe;

25 d) testing the pipeline system for leaks;

26 e) detaching the water supply hose from the threaded bushing of the leak testing  
device; and

1                   f) permanently leaving the leak testing device in place within the third opening of  
2                   the tee fitting after leak testing is completed.

3                   18. The method according to claim 17 including the further step of engaging a sealing  
4                   cap over the threaded bushing after leak testing is completed to permanently seal the threaded  
5                   bushing.

6                   19. The method according to claim 18 wherein the sealing cap and threaded bushing  
7                   have mating threads.

8                   20. The method according to claim 18 wherein the threaded bushing and sealing cap are  
9                   made of plastic, and including the further step of applying plastic cement to at least one of the  
10                  threaded bushing and sealing cap before engaging the sealing cap over the threaded bushing to  
11                  form a permanent seal therebetween.

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